

论文

双醋瑞因对破骨细胞性骨破坏的抑制作用及机制

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摘要:

目的考察双醋瑞因对破骨细胞生成及骨破坏功能是否具有抑制作用, 以及双醋瑞因抑制破骨细胞的作用是否与影响成骨细胞中OPG及RANKL的表达有关。方法MC3T3-E1细胞与骨髓前体细胞共培养生成破骨细胞, 将TRAP染色阳性、细胞核数目≥3个的细胞作为破骨细胞, 计数生成的破骨细胞。计数IL-1β作用前后典型的骨吸收陷窝以观察破骨细胞的活性。应用Western blotting法、流式细胞术及RT-PCR法在蛋白水平及基因水平观察MC3T3-E1细胞中RANKL及OPG的表达。结果双醋瑞因可显著抑制IL-1β作用下破骨细胞的生成及其骨陷窝形成功能, sRANKL的加入可逆转双醋瑞因的上述作用。双醋瑞因可在基因及蛋白水平上调MC3T3-T1细胞中OPG/RANKL的比例。结论双醋瑞因具有抑制IL-1β诱导的破骨细胞性骨破坏的作用, 这一作用可能与其抑制MC3T3-E1细胞中RANKL表达同时促进OPG表达有关。

关键词: 破骨细胞 核刺激因子受体配体 骨保护蛋白 双醋瑞因

Inhibitory effect of diacerein on osteoclastic bone destruction and its possible mechanism of action

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Abstract:

Aim To study the inhibitory action of diacerein on the formation of osteoclasts (OCLs) and their activity in bone resorption as well as the relationship between this action and the expression of osteoprotegerin (OPG) and receptor activator of NF-κB ligand (RANKL) in MC3T3-E1 cells. Methods A coculture system constituted with MC3T3-E1 cells and bone marrow cells for osteoclasts formation was established in vitro. TRAP-positive and multinucleated cells with three or more nuclei in each cell were counted as osteoclasts and the number of pits formed on the dentine slices was determined to judge the activity of osteoclasts. Western blotting, RT-PCR and flow cytometer were used to detect the expression of OPG and RANKL in MC3T3-E1 cells. Results Diacerein significantly inhibited the formation and function of the cultured osteoclasts stimulated by IL-1β. sRANKL could reverse the effect of diacerein. Diacerein inhibited protein and mRNA expression of RANKL but enhanced those of OPG in MC3T3-E1 cells. Conclusion Diacerein may inhibit osteoclastic bone destruction through the inhibition of RANKL expression and the increase of OPG expression in MC3T3-E1 cells.

Keywords: receptor activator of NF-κB ligand osteoprotegerin diacerein osteoclast

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1. 郑元元; 杨京; 陈迪华; 孙兰. 木豆叶提取物对人的类成骨细胞TE85成骨功能和体外破骨细胞分化的影响[J]. 药学报, 2007, 42(4): 386-391
2. 李萍; 王霖; 王文杰. 甲氨蝶呤对破骨细胞的作用及机制研究[J]. 药学报, 2008, 43(10): 1025-1031
3. 王德心; 戴晨林; 赵承; 邱明才; 田桂杰; 林浩. 新型抑制破骨细胞生成的化合物合成与活性研究[J]. 药学报, 2001, 36(9): 657-659

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